WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

City of Moxee Petitioner, vs. Central Washington Railroad Respondent	)	DOCKET NO. TR- 110228 PETITION TO MODIFY HIGHWAY-RAIL GRADE CROSSING WARNING DEVICES, INSTALL AN INTER-TIE BETWEEN A HIGHWAY SIGNAL AND A RAILROAD CROSSING SIGNAL SYSTEM, AND REQUEST FOR DISBURSEMENT OF FUNDS FROM THE GRADE CROSSING PROTECTIVE FUND USDOT CROSSING NO.: 098481T

The Petitioner asks the Washington Utilities and Transportation Commission to approve the modification of highway-rail grade crossing warning devices, install an inter-tie between the highway signal and the railroad crossing signal system, and disburse funds from the Grade Crossing Protective Fund.

Section 1 – Petitioner's Information

City of Moxee
Petitioner

Signature

255 W Seattle Ave
Street Address

Moxee, WA 98936
City, State and Zip Code

PO Box 249, Moxee, WA 98936
Mailing Address, if different than the street address

Byron Adams
Contact Person Name

(509)575-8851 byronadams@charter.net
Contact Phone Number and E-mail Address

Section 2 – Respondent's Information

Central Washington Railroad
Respondent

111 University Parkway, Ste 200
Street Address

Yakima, WA 98901
City, State and Zip Code

Mailing Address, if different than the street address

Dave Cyr
Contact Person Name

(509)989-1338 dcyr@cbrr.com
Contact Phone Number and E-mail Address

Section 3 – Crossing Location

1. Existing highway/roadway Beaudry Road immediately north of State Route 24 (SR24)

2. Existing railroad 0849

3. USDOT Crossing No. 098481T

4. Located in the SW 1/4 of the SW 1/4 of Sec. 36 , Twp. 13 , Range 19 W.M.

5. GPS location, if known -120°24'14"E 46°33'45"N

6. Railroad mile post (nearest tenth) 7.4

7. City Moxee County Yakima

Section 4 – Current Highway Traffic Information

1. Name of highway Beaudry Road

2. Road authority City of Moxee

3. Average annual daily traffic (AADT) 3,900

4. Number of lanes 2

5. Roadway speed 35 mph

6. Is the crossing part of an established truck route? Yes X No ____

7. If so, trucks are what percent of total daily traffic? 10%

8. Is the crossing part of an established school bus route? Yes X No ____

9. If so, how many school buses travel over the crossing each day? 98

10. Describe any changes to the information in 1 through 7, above, expected within ten years:

Growth is anticipated over the next ten years. The East Valley schools are currently expanding, a residential development has been proposed, which Beaudry Road would serve and the industrial-zoned area on Postma Road has had significant interest recently.

Section 5 – Current Crossing Information

1. Railroad company Central Washington Railroad

2. Type of railroad at crossing **X** Common Carrier □ Logging □ Industrial

□ Passenger □ Excursion

3. Type of tracks at crossing **X** Main Line □ Siding or Spur

4. Number of tracks at crossing 1

5. Average daily train traffic, freight 2

Authorized freight train speed 20 mph Operated freight train speed 20mph/10mph at crossing

6. Average daily train traffic, passenger none

Authorized passenger train speed N/A Operated passenger train speed N/A

7. Describe any changes to the information in 1 through 4, above, expected within ten years:

No changes are expected within ten years.

8. What is the available sight distance from the stop bar (or 25 feet from the tracks if no stop bar) on both approaches to the crossing?

The available sight distance from the stop bar on both approaches to the crossing is 1000 feet with the exception of southbound traffic looking east, which is only 150 feet.

9. If the sight distance is less than 400 feet, describe the structures, roadway or track curvature, visual obstacles or other characteristics that limit sight distance.

The sight distance is minimal looking east when traveling eastbound due to a chain link fence and trees located on private property.

Section 6 – Current Warning Devices

1. Provide a complete description of the warning devices currently located at the crossing, including signs, gates, lights, train detection circuitry and any other warning devices.

Currently, the railroad crossing utilizes minimal warning devices. These devices include signage and markings only. The signs currently used by the crossing are classified as regulatory and warning. The following Manual on Uniform Traffic Control Devices (MUTCD) regulatory signs are used at the existing railway crossing:

R8-8 is a vertical rectangular sign with the words "DO NOT STOP ON TRACKS" on four lines. This sign is only used on the southbound approach approximately 10 feet prior to the crossing.

R15-1 is composed of two horizontal rectangular white signs placed one on top of the other at a 90-degree angle to form an "x," denoting a crossbuck. In black letters, the word "RAILROAD" is shown on the piece running from northwest to southeast, and the word "CROSSING" is shown on the piece running from southwest to northeast. This sign is used on the northbound and southbound approaches approximately 10 feet prior to the crossing.

The following MUTCD warning signs are used at the existing railway crossing:

W10-1 is a round sign. A black "X" covers the sign, and two "R's" are shown in the left and right quadrants of the sign. This sign is used on the northbound and southbound approaches. One (1) sign is located approximately 10 feet from the tracks on the northbound approach. Two (2) signs are located on the southbound approach spaced at 150 feet.

W10-2 is a diamond-shaped sign. It shows a cross intersection with an elongated right arm. A symbol of a vertical railroad track is shown across the right arm. Two (2) signs are used on SR24 500 feet prior to Beaudry Rd on the eastbound and westbound directions.

MUTCD pavement markings are also utilized by the existing railway crossing. Grade crossing pavement marking symbols are used on the northbound and southbound approaches parallel to the W10-1 warning signs. However, the marking for the northbound movement is located solely on the south leg, which only provides those drivers with warning of the crossing.

Stop bar markings are located approximately 10 feet before the tracks when traveling northbound and 25 feet prior to the railway crossing in the southbound direction. The stop bars are well-faded adversely affecting visibility to drivers.

There is currently no railroad detection or preemption at this location, and no active crossing protection.

Section 7 – Description of Proposed Changes

1. Describe in detail the number and type of proposed automatic signals, gates or other warning devices, including proposed circuitry.

The proposed warning devices at the Beaudry Road railroad crossing will include a 28-foot US&S Model 95 crossing gate with a sidelight cantilever assembly, with a total of 8 ea 12" LED 10V Red flashing light units on the south roadway approach. A 30-foot US&S Model 95 crossing gate with a total of 4 ea 12" LED 10V Red flashing light units will be installed on the north roadway approach. A 34-foot cantilever signal with a total of 10 ea 12" LED 10V Red flashing light units will also be installed on the north roadway approach. An LED blank-out sign will be installed on SR24 for westbound traffic to provide warning for right turns onto Beaudry Road. This equipment will be controlled from a 6'x6' Bungalow located in the southwest quadrant of the grade crossing.

The activation equipment will be an HXP-3R constant warning time device with an 8-wire preemption and supervisory circuitry interconnection between highway traffic signals and highway-rail grade crossing warning systems. The activation equipment will function as follows:

The first preempt at 72 seconds would allow for the right of way transfer time for the worst case condition, where the traffic controller had just started to serve a conflicting pedestrian phase (33 seconds), then once in the track clearance green phase, would allow additional time for the design vehicle on the far side of the tracks to begin moving and then clear the track (20.8 seconds) and additional separation time of (4 seconds). This totals 57.8 seconds, while gate and cantilever lights begin to flash at least 30 seconds prior to train arrival. This would be an advance warning time of 58 seconds – 30 seconds = 28 seconds. However, to avoid a gate design vehicle interaction, the advance preempt must occur 42 seconds sooner than the 30 seconds for the gate and cantilever lights to flash.

See the attached red in, yellow out circuit plans.

Proposed signage and markings are shown on the attached Site Plan. Existing warning and regulatory markings to be removed and replaced include the stop line and grade crossing pavement marking symbol for southbound traffic approaching the railroad crossing. The proposed location of the stop line will be 8 feet north of the gate location as shown on the Site Plan. Signage changes will include relocating existing signage. The regulatory R15-1 signs will be moved to the gate masts on both crossing approaches, from the existing post mounts. The regulatory R8-8 sign will be moved to a post mount north of the railroad tracks for southbound traffic, at the location shown on the Site Plan. Approximately 20 linear feet of sidewalk will be removed to place the gate foundation in the location shown on the Site Plan. All proposed signage and markings will adhere to the 2009 Edition MUTCD.

Section 8 – Illustration of Proposed Warning Devices

Attach a detailed diagram, drawing, map or other illustration showing the proposed modification.

See attached site plan in addition to red in, yellow out circuit plans.

Section 9 – Traffic Signal Preemption

Complete the attached Guide for Determining Time Requirements for Traffic Signal Preemption at Highway-Rail Grade Crossings.

1. Specify simultaneous or advance preemption requested.
   Advance Preemption

If advance preemption, what is the preemption time.
   42 seconds

Section 10 – Project Cost Information

1. Breakdown of estimated total cost.

Description	Cost
Labor	$30,500
PIP Cantilever Foundation	3,400
Cable/Wiring	3,400
Masts and Junction Boxes	2,200
Crossing Signal Lights (GE LEDs)	4,800
Rectifiers	950
Internal House Material	4,000
Gate Foundation	1,800
Model 95 Gate Mechanisms	8,800
Crossing Gates	380
Permanent Signing	1,000
Permanent Markings	1,500
6'x6' Bungalow	On-hand
34' Cantilever	On-hand
Removal of signal post mount	Provided by WSDOT
Relocate signal heads on northeast corner	Provided by WSDOT
Replace signal controller if necessary	Provided by WSDOT
Provide and install interconnect box	Provided by WSDOT
Provide and install LED blank-out sign	Provided by WSDOT
Engineering costs	4,000
Total Cost	**$66,730**

2. Names of the parties contributing to the project and the amount each is contributing.

   City of Moxee $46,730
   GCPF $20,000

3. Provide the amount the applicant is requesting from the GCPF grant program.

   The applicant is requesting $20,000 from the GCPF grant program to aid in the implementation of this project.

Section 11 – Project Completion Date

Project completion date: June 30, 2011

Section 12 – Waiver of Hearing by Respondent

Waiver of Hearing

The undersigned represents the Respondent in the petition to modify highway-rail grade crossing warning signals, inter-tie highway signal and a railroad crossing signal, and request disbursement of funds from the Grade Crossing Protective Fund at the following crossing.

USDOT Crossing No. 098481T

We have investigated the conditions at the crossing. We are satisfied the conditions are the same as described by the Petitioner in this docket. We agree the railroad warning signals should be modified and inter tied to the highway signals, and consent to a decision by the commission without a hearing.

Dated at _____ , Washington, on the _____ day of

_____, 20 ____.

_____

Printed name of Respondent

_____

Signature of Respondent's Representative

_____

Title

_____

Phone number and e-mail address

_____

_____

Mailing address

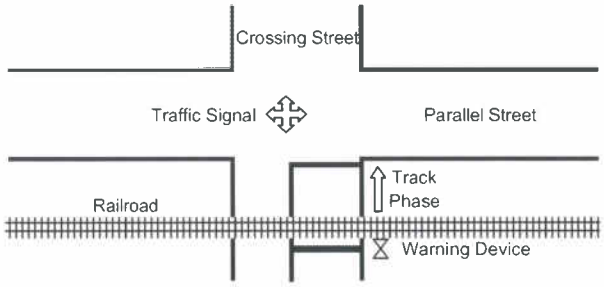
Minnesota Department of Transportation

GUIDE FOR DETERMINING TIME REQUIREMENTS FOR TRAFFIC SIGNAL PREEMPTION AT HIGHWAY-RAIL GRADE CROSSINGS

City Moxee, WA
County Yakima
District WSDOT SCR

Date 03/13/08
Completed by Joe DeGroat
District Approval

Show North Arrow



Parallel Street Name: SR24
Crossing Street Name: Beaudry Road MP 3.79

Railroad BNSF/Columbia Basin RR
Crossing DOT#

Railroad Contact Paul Kleinhenz
Phone (800) 825-7090

SECTION 1: RIGHT-OF-WAY TRANSFER TIME CALCULATION

Preempt verification and response time

			Remarks
1. Preempt delay time (seconds)	1.	0.0	
2. Controller response time to preempt (seconds)	2.	0.0	Controller type: 2070
3. Preempt verification and response time (seconds): add lines 1 and 2	3.	0.0	

Worst-case conflicting vehicle time

			Remarks
4. Worst-case conflicting vehicle phase number	4.	2	
5. Minimum green time during right-of-way transfer (seconds)	5.	20.0	
6. Other green time during right-of-way transfer (seconds)	6.	0.0	
7. Yellow change time (seconds)	7.	5.0	
8. Red clearance time (seconds)	8.	2.0	
9. Worst-case conflicting vehicle time (seconds): add lines 5 through 8	9.	27.0	

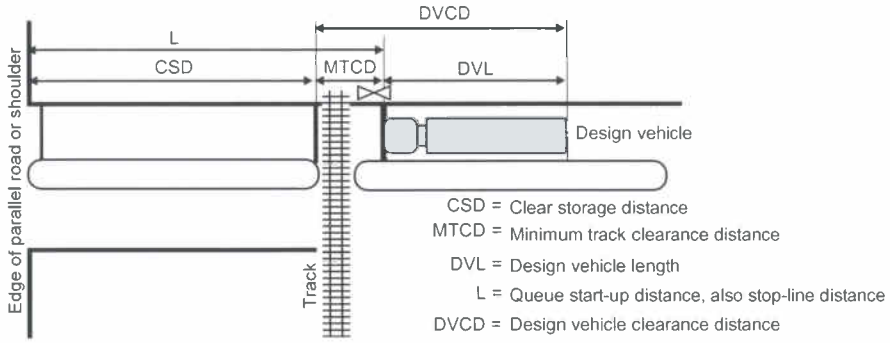
Worst-case conflicting pedestrian time

			Remarks
10. Worst-case conflicting pedestrian phase number	10.	2	
11. Minimum walk time during right-of-way transfer (seconds)	11.	4.0	
12. Pedestrian clearance time during right-of-way transfer (seconds)	12.	22.0	
13. Vehicle yellow change time, if not included on line 12 (seconds)	13.	5.0	
14. Vehicle red clearance time, if not included on line 12 (seconds)	14.	2.0	
15. Worst-case conflicting pedestrian time (seconds): add lines 11 through 14	15.	33.0	

Worst-case conflicting vehicle or pedestrian time

16. Worst-case conflicting vehicle or pedestrian time (seconds): maximum of lines 9 and 15	16.	33.0
17. Right-of-way transfer time (seconds): add lines 3 and 16	17.	33.0

SECTION 2: QUEUE CLEARANCE TIME CALCULATION



			Remarks
18. Clear storage distance (CSD, feet)	18.	31	
19. Minimum track clearance distance (MTCD, feet)	19.	44	
20. Design vehicle length (DVL, feet)	20.	75	Design vehicle type:
21. Queue start-up distance, L (feet): add lines 18 and 19	21.	75	
22. Time required for design vehicle to start moving (seconds): calculate as 2+(L÷20)	22.	5.8	Remarks
23. Design vehicle clearance distance, DVCD (feet): add lines 19 and 20	23.	119	
24. Time for design vehicle to accelerate through the DVCD (seconds)	24.	15.0	Read from Figure 2 in Instructions.
25. Queue clearance time (seconds): add lines 22 and 24	**25.**	20.8	

SECTION 3: MAXIMUM PREEMPTION TIME CALCULATION

			Remarks
26. Right-of-way transfer time (seconds): line 17	26.	33.0	
27. Queue clearance time (seconds): line 25	27.	20.8	
28. Desired minimum separation time (seconds)	28.	4.0	
29. Maximum preemption time (seconds): add lines 26 through 28	**29.**	57.8	

SECTION 4: SUFFICIENT WARNING TIME CHECK

				Remarks
30. Required minimum time, MT (seconds): per regulations	30.	20.0		
31. Clearance time, CT (seconds): get from railroad	31.	10.0		
32. Minimum warning time, MWT (seconds): add lines 30 and 31	32.		30.0	Excludes buffer time (BT)
33. Advance preemption time, APT, if provided (seconds): get from railroad	33.		0.0	
34. Warning time provided by the railroad (seconds): add lines 32 and 33	**34.**		30.0	
35. Additional warning time required from railroad (seconds): subtract line 34 from line 29, round up to nearest full second, enter 0 if less than 0	**35.**		28	

If the additional warning time required (line 35) is greater than zero, additional warning time has to be requested from the railroad. Alternatively, the maximum preemption time (line 29) may be decreased after performing an engineering study to investigate the possibility of reducing the values on lines 1, 5, 6, 7, 8, 11, 12, 13 and 14.

Remarks: Preliminary crossing circuit plans from rail road show 20s MWT plus 10s for speed variance and ballast changes plus 4s for equipment response time. These calcs consider the 10s as CT and the 4s as buffer time.

SECTION 5: TRACK CLEARANCE GREEN TIME CALCULATION (OPTIONAL)

Preempt Trap Check

36. Advance preemption time (APT) provided (seconds): ..... 36. 42.0 Line 33 only valid if line 35 is zero.

37. Multiplier for maximum APT due to train handling ..... 37. 1.00 See Instructions for details.

38. Maximum APT (seconds): multiply line 36 and 37 ..... 38. 42.0

39. Minimum duration for the track clearance green interval (seconds) 39. 15.0

Remarks

For zero advance preemption time

40. Gates down after start of preemption (seconds): add lines 38 and 39 ..... 40. 57.0

41. Preempt verification and response time (seconds): line 3 ..... 41. 0.0

42. Best-case conflicting vehicle or pedestrian time (seconds): usually 0..... 42. 0.0

Remarks

43. Minimum right-of-way transfer time (seconds): add lines 41 and 42 ..... 43. 0.0

44. Minimum track clearance green time (seconds): subtract line 43 from line 40 ..... 44. 57.0

Clearing of Clear Storage Distance

45. Time required for design vehicle to start moving (seconds), line 22 ..... 45. 5.8

46. Design vehicle clearance distance (DVCD, feet), line 23 ..... 46. 119

47. Portion of CSD to clear during track clearance phase (feet) .. 47. 31

Remarks

CSD* in Figure 3 in Instructions.

48. Design vehicle relocation distance (DVRD, feet): add lines 46 and 47 ..... 48. 150

49. Time required for design vehicle to accelerate through DVRD (seconds) ..... 49. 16.8 Read from Figure 2 in Instructions.

50. Time to clear portion of clear storage distance (seconds): add lines 45 and 49 ..... 50. 22.6

51. **Track clearance green interval (seconds): maximum of lines 44 and 50, round up to nearest full second ....** 51. 57

SECTION 6: VEHICLE-GATE INTERACTION CHECK (OPTIONAL)

52. Right-of-way transfer time (seconds): line 17 ..... 52. 33.0

53. Time required for design vehicle to start moving (seconds), line 22 ..... 53. 5.8

54. Time required for design vehicle to accelerate through DVL (on line 20, seconds) ..... 54. 11.7 Read from Table 3 in Instructions.

55. Time required for design vehicle to clear descending gate (seconds): add lines 52 though 54 ..... 55. 50.5

Remarks

56. Duration of flashing lights before gate descent start (seconds): get from railroad 56. 3.0

Remarks

57. Full gate descent time (seconds): get from railroad 57. 12.0

58. Proportion of non-interaction gate descent time ..... 58. 0.47 Read from Figure 5 in Instructions.

59. Non-interaction gate descent time (seconds): multiply lines 57 and 58 ..... 59. 5.6

60. Time available for design vehicle to clear descending gate (seconds): add lines 56 and 59 ..... 60. 8.6

61. **Advance preemption time (APT) required to avoid design vehicle-gate interaction (seconds): subtract line 60 from line 55, round up to nearest full second, enter 0 if less than 0 ..... 61.** 42

City of Moxee

January 25, 2011

Washington Utilities and Transportation Commission
1300 S. Evergreen Park Dr. SW
P.O. Box 47250
Olympia, WA 98504-7250

Attn: Kathy Hunter
Deputy Assistant Director, Transportation Safety

Dear Kathy:

The City of Moxee currently has one railroad crossing within its City limits, on Beaudry Road immediately north of State Route 24. Beaudry Road is federally classified as a minor arterial and serves the western core of the City including schools, industry, and residences. Currently, this crossing does not utilize active warning devices therefore the City of Moxee is interested in signalization improvements to this railroad crossing for safety reasons.

Fortunately, there have been few accidents at this crossing to date; however, accidents have occurred that may have been avoided with crossing signalization. In August, 2006, a train and semi-truck collided at this crossing. With growing population, an increase in school traffic, school buses, industry trucks, and residential development, the potential for accidents increases. In 2006, a traffic study was prepared for the ACE Hardware distribution facility. Please note, this study indicated that signalization at the railroad crossing of Beaudry Road should be completed regardless of the ACE facility construction.

The following documents are enclosed:

- Petition to Modify Highway Rail Grade Crossing Warning Devices, Install an Inter-tie between a Highway Signal and a Railroad Crossing Signal System, and Request for Disbursement of Funds From the Grade Crossing Protective Fund
- Support letters from Central Washington Railroad and Washington State Department of Transportation (WSDOT)
- Site Plan and Installation Plans
- Guide for Determining Time Requirements for Traffic Signal Preemption at Highway-Rail Grade Crossings

WSDOT has committed to support this project by funding and implementing modifications to the traffic signal at SR 24 and Beaudry Road, required for intertie with the active railroad crossing. With assistance from the WUTC and others, the City of Moxee has acquired surplus equipment from other crossings, further advancing the potential for upgrading this crossing. The estimated total project cost remaining for the improvements at this railroad crossing is $66,730. To aid in the implementation of this project, the City of Moxee is requesting $20,000 from the Grade Crossing Protective Fund administered by the Washington Utilities and Transportation Commission.

We look forward to working with you on this project to signalize this railroad crossing, improve the safety of vehicular and rail traffic, and minimize the potential for an injury-related accident. Thank you for your consideration to advance this project by means of reviewing the enclosed Petition as well as the potential for Grade Crossing Protective Fund support. If you have any questions or need additional information, please call.

Very truly yours,

Byron Adams
City Supervisor
City of Moxee

Enclosures

BA/baa

Central Washington Railroad

January 19, 2011

Washington State Utilities & Transportation Commission
PO Box 47250
Olympia, WA 98504

To Whom It May Concern,

Central Washington Railroad (CWR) is writing this letter in full support of the proposed signalization upgrade at Beaudry Road in Moxee, WA, USDOT Crossing #: 098481T. CWR has been working with the City of Moxee and their team to make sure the changes provide for the utmost in safety concerns at this crossing. CWR jointly submits the Petition to WUTC for review, yet reserves the right to sign the Waiver of Hearing until WUTC comments have been made and reviewed by CWR and their engineers. CWR leases the railroad from BNSF and they have been in the loop for the project as well. They have given CWR full authority to proceed with the project upon completion of the Tri-Party Agreement between the City of Moxee, CWR and BNSF.

CWR and the City of Moxee hope that this Petition review will be timely so the team can work on completing the project by June 2011. It is also our hopes that the WUTC will select this project for funds from the Grade Crossing Protective Fund, as this crossing is in high need for the signal upgrade for safety purposes.

Thank you for your consideration and timely review of the Petition attached.

Best Regards,

Nicholas B. Temple, Jr.
Central Washington Railroad

111 South 33rd Street • Suite 200 • Yakima, Washington 98901
Phone 509-453-9166 • Fax 509-453-9349

Washington State Department of Transportation
Paula J. Hammond
Secretary of Transportation

South Central Region
2809 Rudkin Road, Union Gap
P.O. Box 12560
Yakima, WA 98909-2560

(509) 577-1600
TTY: 1-800-833-6388
www.wsdot.wa.gov

January 21, 2011

Byron Adams
Public Works Supervisor
City of Moxee
255 W Seattle Ave
Moxee, WA 98936

Dear Mr. Adams:

Thank you for including our staff in the development of the proposed project to make improvements to the railroad crossing of Beaudry Road. I want to express my support for the project that will add active warning at the rail crossing near our traffic signal. The project will provide train detection, which will allow the Washington State Department of Transportation to operate the traffic signal at SR 24 and Beaudry Road with increased safety and efficiency during a rail crossing. The active warning will provide interconnect between the train detection and control system and the traffic signal. The interconnect will provide linkage between the railroad signals and adjacent traffic signal to allow vehicles to clear the tracks at the traffic signal as a train approaches and prohibit certain movements while the gates are down and the train crosses Beaudry Road.

The Department of Transportation will support this project by funding and implementing modifications to the traffic signal at SR 24 and Beaudry Road. The Department will purchase and install an 8 wire gate down circuit and AC isolator at our traffic signal control cabinet, relocate traffic signal displays that will be occluded by the new overhead structure, install an electronic "No Right Turn" blank out sign for the westbound right turn and cable to the signal controller, and pull in the interconnect between the railroad bungalow and traffic signal cabinet. We will fund this work from our low cost enhancement budget, and perform the work as the railroad crossing enhancements are under construction.

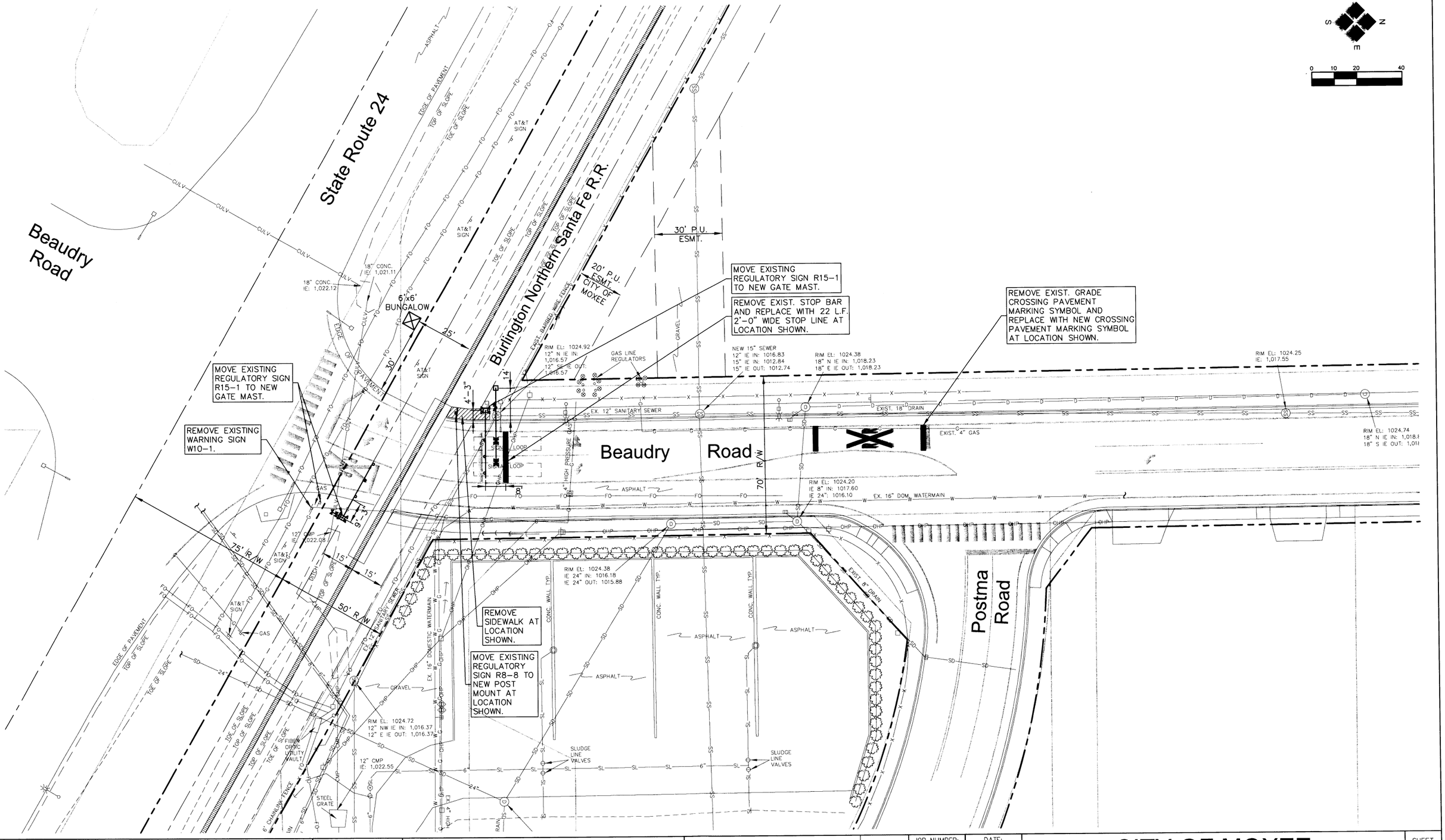
Again, thank you for including us in the development of the project. Feel free to forward this letter as part of your Petition to the WUTC indicating our strong support of your efforts to improve this rail crossing.

Regards,

Rick Gifford, P.E.
Region Traffic Engineer

RG:ch

cc: Don Whitehouse, Regional Administrator
Ahmer Nazam, HQ Railroad Liason
Roger Arms, Local Programs Engineer



Huibregtse, Louman Associates, Inc.
CIVIL ENGINEERING • LAND SURVEYING • PLANNING
801 North 39th Avenue ❖ Yakima, WA 98902
(509) 966-7000 ❖ FAX (509) 965-3800

REVISION	DATE

JOB NUMBER: 05128	DATE: 1-13-11
FILE NAMES:	
DRAWING:	05128.DWG
PLAN:	N/A
PROFILE:	N/A
DESIGNED BY:	MTB
ENTERED BY:	BAA

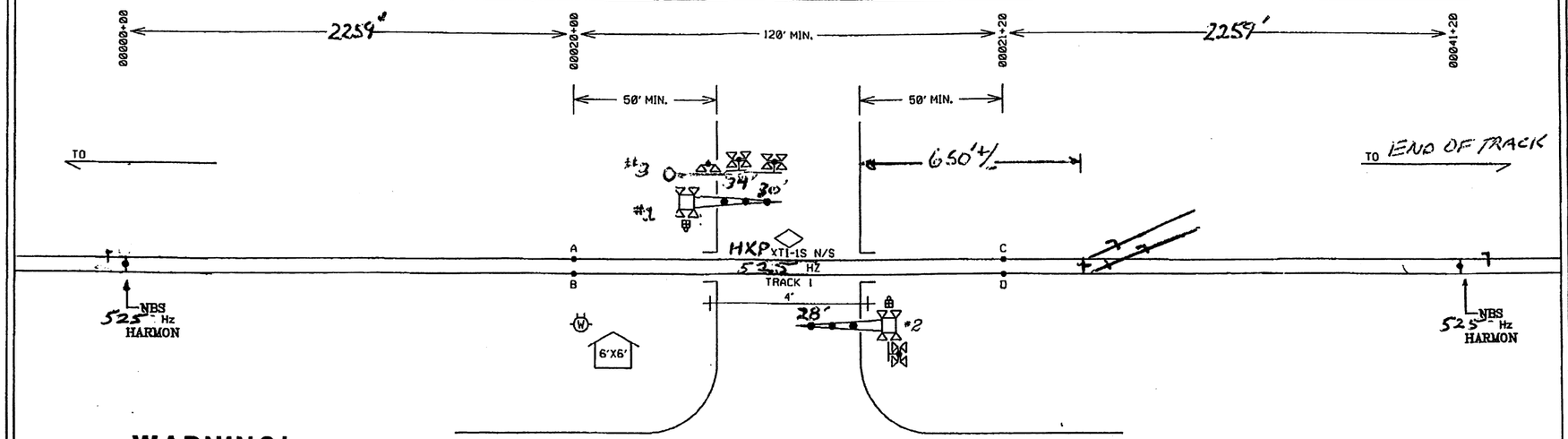
CITY OF MOXEE
SR 24 / Beaudry Road Intersection
Railroad Crossing Signalization

SITE PLAN

SHEET 1 OF 1

Typ: 020907 Ch: N

PLAN MUST NOT BE MODIFIED WITHOUT APPROVAL OF SIGNAL ENGINEERING



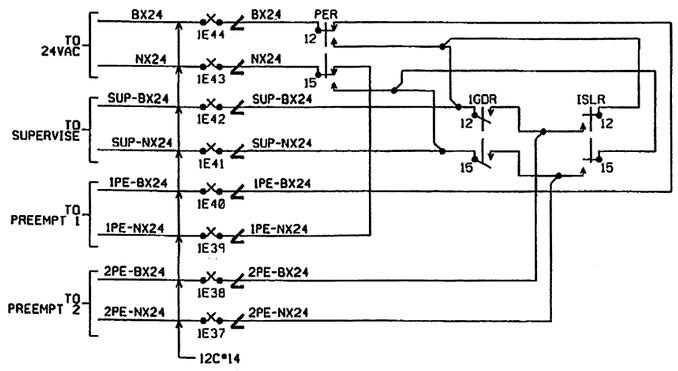
STATE ROUTE 24

M.P.
BEAUDRY ROAD
DOT
℄

WARNING!

HIGHWAY-RAIL GRADE CROSSING WARNING SYSTEM AND HIGHWAY TRAFFIC SIGNALS ARE INTERCONNECTED.

BEFORE MODIFICATION is made to any operation which connects to or controls the timing of an active railroad warning system and/or timing and phasing of a traffic signal the appropriate party(ies) shall be notified and, if necessary, a joint inspection conducted.



NOTES:

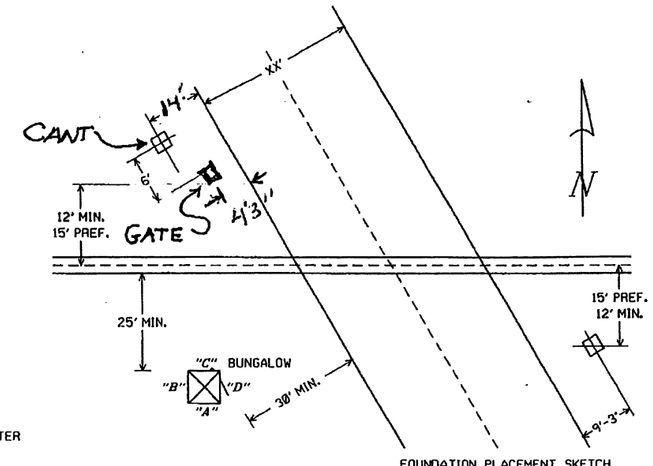
EQUIPMENT IS DESIGNED FOR 20 SECONDS MINIMUM WARNING TIME AT 20 MPH.
APPROACHES WERE LENGTHENED 0 SECOND(S) FOR WIDE OR ANGLED CROSSING (CT).
APPROACHES WERE LENGTHENED 0 SECOND(S) FOR ADDITIONAL GATE DELAY.
APPROACHES WERE LENGTHENED 10 SECONDS FOR SPEED VARIANCE AND BALLAST CHANGES (BT).
APPROACHES WERE LENGTHENED 0 SECONDS FOR SIMULTANEOUS PREEMPTION.
APPROACHES WERE LENGTHENED 41 SECONDS FOR ADVANCED PREEMPTION (APT).
APPROACHES WERE LENGTHENED 5 SECONDS FOR EQUIPMENT RESPONSE TIME (ERT).

GATE LENGTH SHOWN IS MEASURED FROM MAST C/L TO GATE TIP.

NOTES:

-TEST TERMINAL
-EQUALIZER
-LINE ARRESTER
-HEAVY DUTY ARRESTER
-TWISTED WIRE 2 TURNS PER FOOT
-CONNECTION TO REC./RTU

ALL WIRES #16 AWG UNLESS OTHERWISE NOTED



FOUNDATION PLACEMENT SKETCH
NOT TO SCALE

SIGNAL LOCATION PLAN

PRELIMINARY

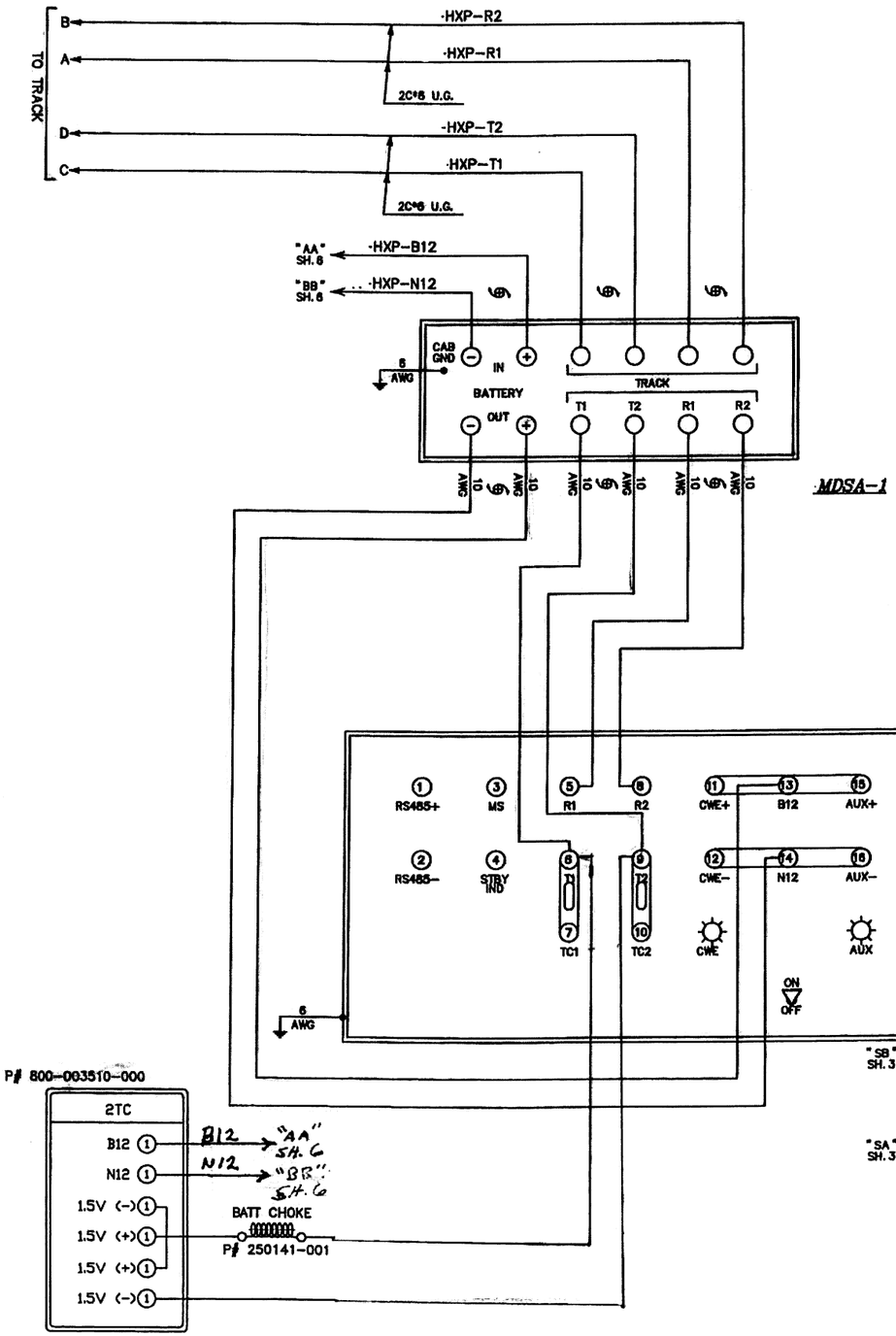
CENTRAL WASHINGTON RAILROAD

CROSSING CIRCUIT PLAN
BEAUDRY ROAD MOXEE, WA

DESIGNED XXXX SEQ.	LS	MP 7.41	SH 01 OF 8

xing_1tk_01.dgn February 09, 2007 LEVEL 5 = ON LEVEL 9 = ON

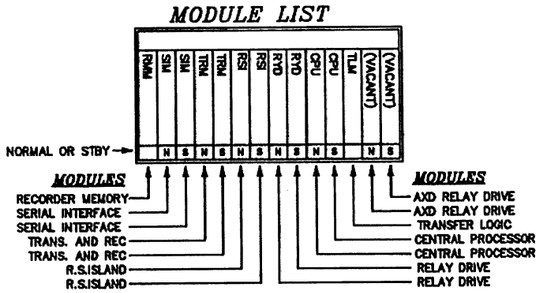
DOT/AAR NO. 098 481T



AX ADJUSTMENTS

NO.	ABBREVIATION	AX-1	AX-2
1	TK-ASN	1	1
2	OF-TK1	0	0
3	OF-TK2	0	0
4	WT	35	60
5	MD-RST	0	0
6	CW/MD	CW	MD
7	CJ-LOS	0	0
8	PJ-DET	15	15

MODULE LIST



PROGRAM INFORMATION

PROGRAM VERSION 1.3 OR LATER

* =FIELD ADJUSTMENT TO BE MADE ACCORDING TO THE HXP-3 INSTRUCTION MANUAL.

SWITCH INFORMATION

SWITCH	TRACK 1
MASTER/SLAVE	MASTER
RSI FAULT JUMPER	0
RSI-LOS	1

HXP-3 ADJUSTMENTS

NO.	ADJUSTMENT NAME	TRACK 1
1	APP. LENGTH	1,760'
2	WARNING TIME	30
3	LIA	* ( )
4	TC	* ( )
5	MD-RESTART	* 10

2259'

OPTION ADJUSTMENTS

NO.	ABBREVIATION	TRACK 1
1	TK-ENA	UP
2	TK FO	630
3	CW/MD	C
4	UNI-BI	b
5	NBS-C	* ( )
6	CWEWT	80
7	LOS	16
8	I-LOS	5
9	BC	* 160
10	P-COMP	* ( )
11	AX1	—
12	AX2	—
13	AX3	—
17	MDR-AX	n
20	FS-DET	0
48	PF-ENA	UP

HXP CONTROL PLAN

PRELIMINARY

CENTRAL WASHINGTON RAILROAD

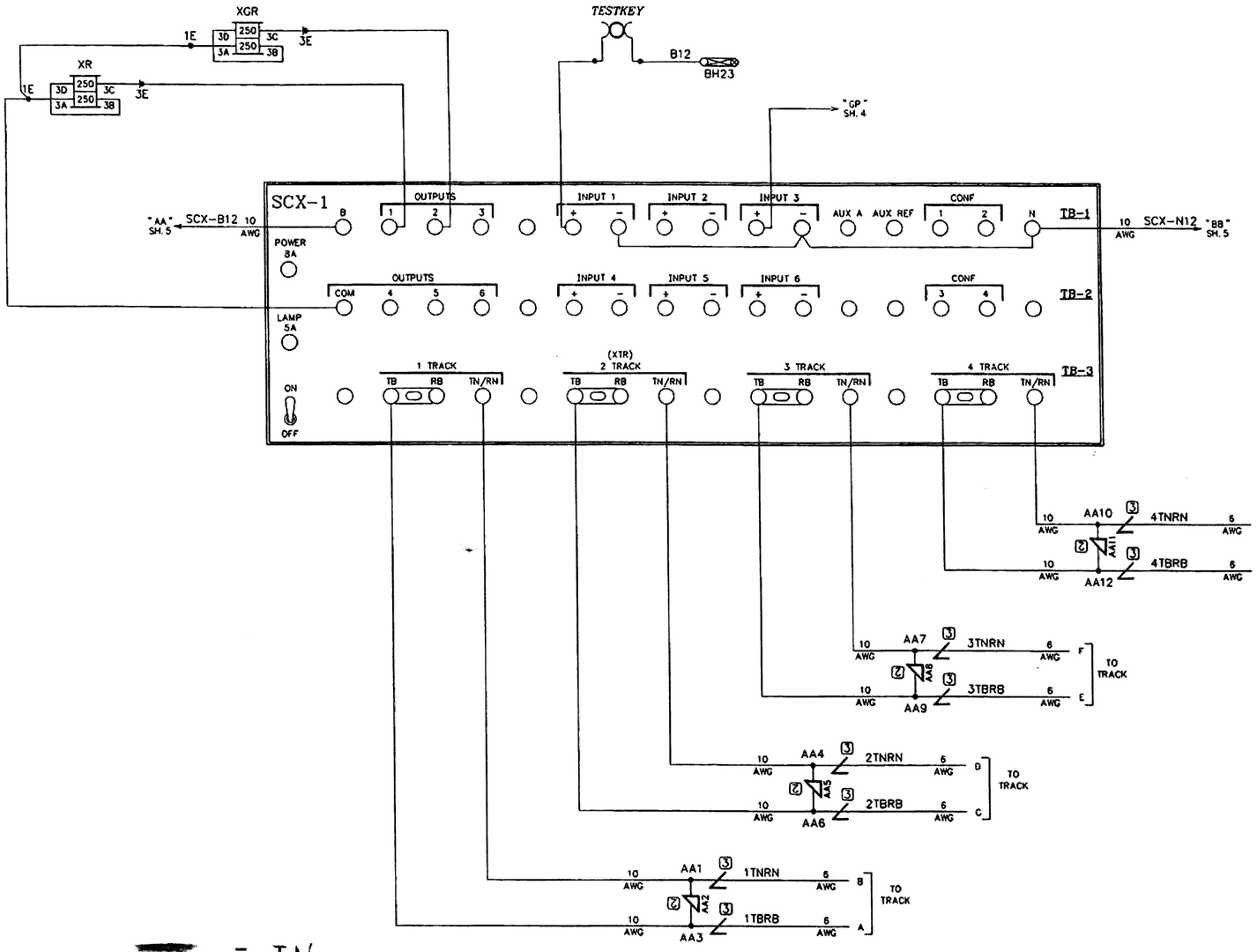
CROSSING CIRCUIT PLAN
BEAUDRY ROAD MOXEE, WA

DESIGNED XXXX SEQ.

LS | MP 7.41 | SH 2 OF 8

DOT/AAR NO. 098 481T

PLAN MUST NOT BE MODIFIED WITHOUT APPROVAL FROM THE OFFICE OF THE DIRECTOR CONTROL SYSTEMS ENGINEERING



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= OUT

NOTE

PROGRAM IS STANDARD XING, STICK RELEASE TIMER IS SET FOR 15 MINUTES.

REVISIONS

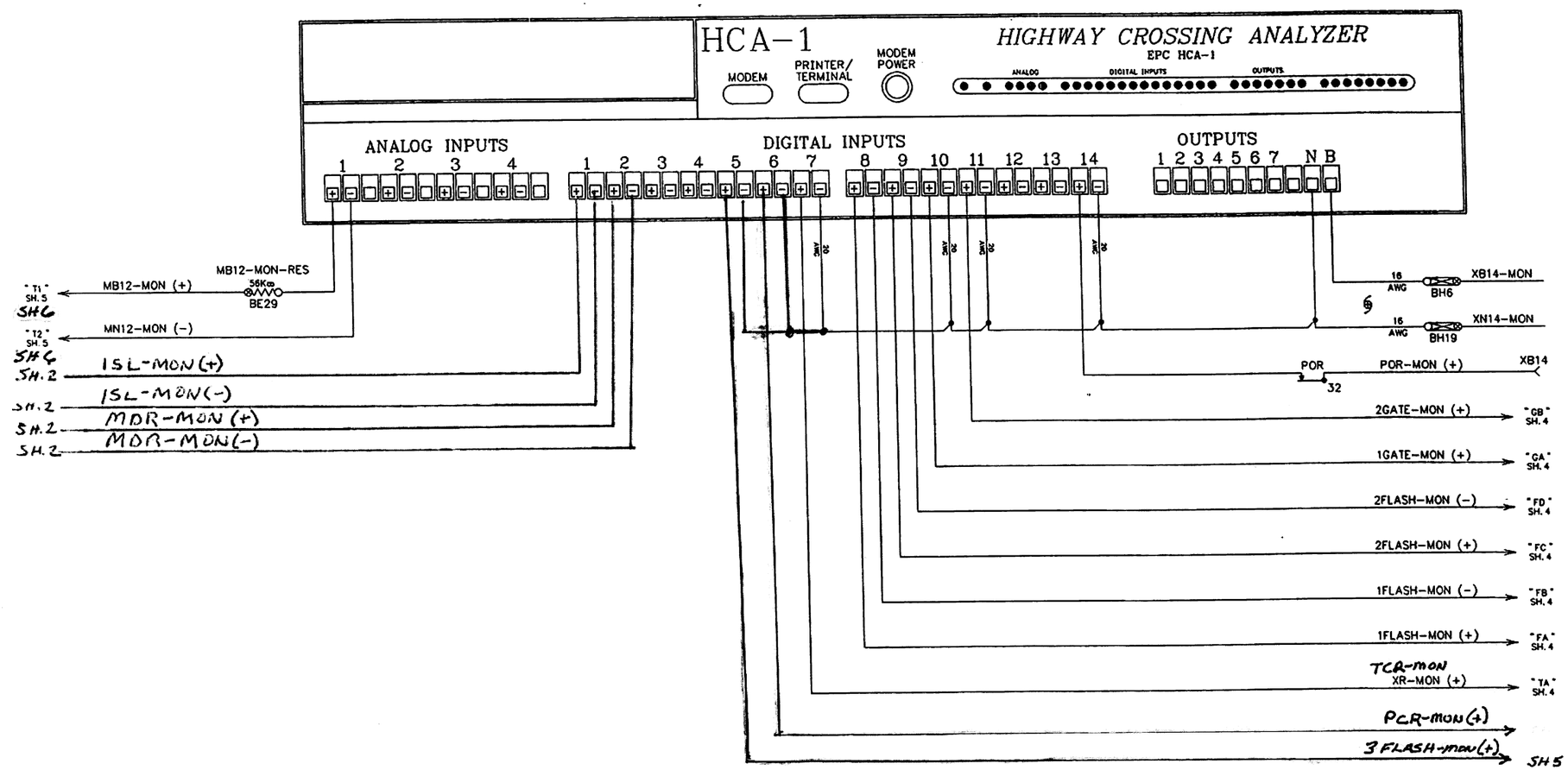
BURLINGTON NORTHERN RAILROAD COMPANY
CONTROL SYSTEMS ENGINEERING 4105 N LEXINGTON AVE, ARDEN HILLS, MN 55126-6181

DOT NUMBER BN 58-878U	WEST CURLEW LAKE ROAD SAN POIL, WA RAILROAD-HIGHWAY GRADE CROSSING WARNING SYSTEM NAPA ST TO SAN POIL M.P. 75.50	AUTHORITY AFE 94-1816

DRAWN: WPC DATE: 10-31-94	LS NO. 377	DWG NO. 377X0755	2	SHEET OF 7

377X0755-2

PLAN MUST NOT BE MODIFIED WITHOUT APPROVAL FROM THE OFFICE OF THE DIRECTOR CONTROL SYSTEMS ENGINEERING



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RECORDER CONTROL PLAN

PRELIMINARY

CENTRAL WASHINGTON RAILROAD

CROSSING CIRCUIT PLAN
BEAUDRY ROAD MOXEE, WA

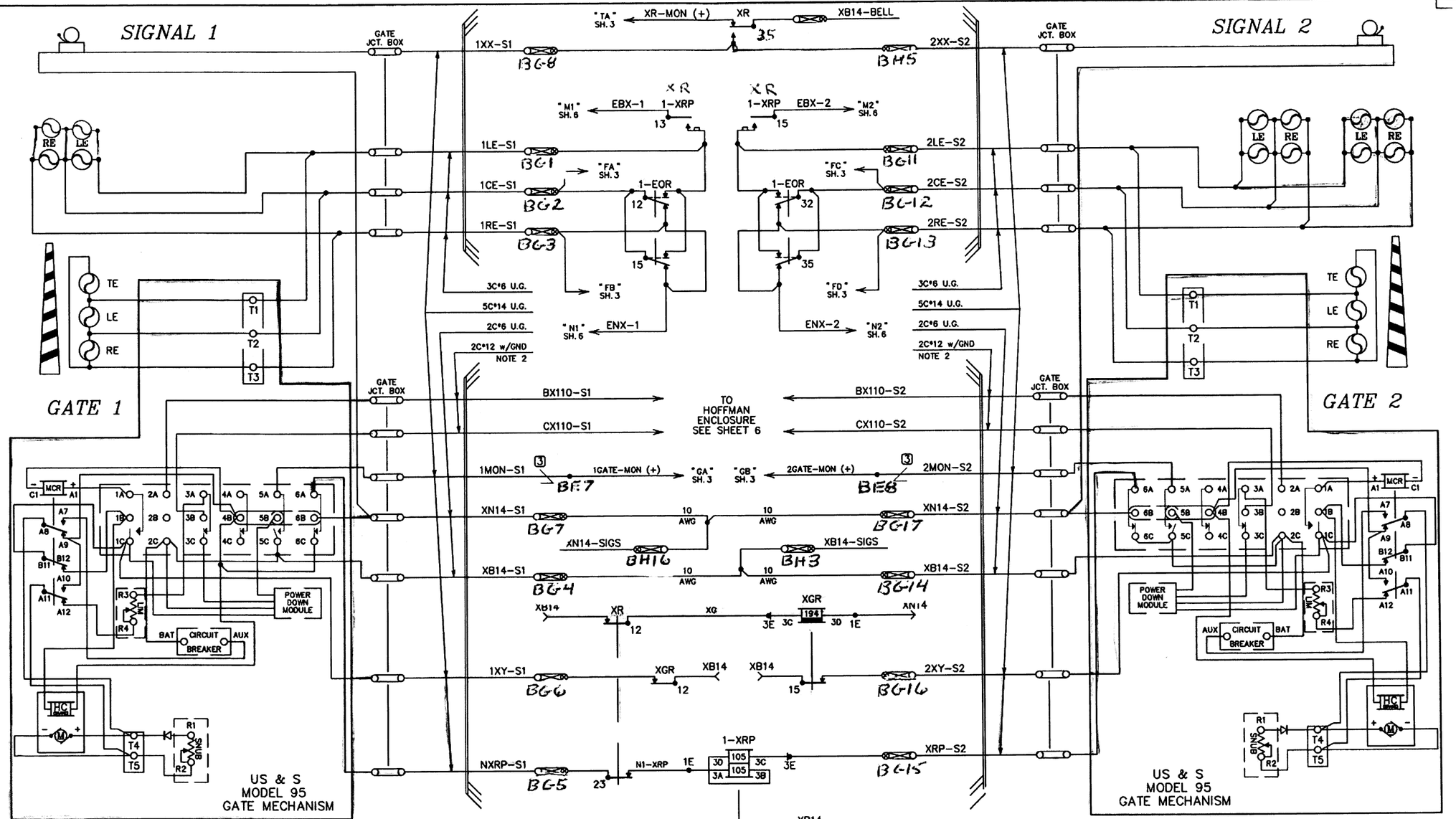
DESIGNED XXXX SEO.#

LS | MP 7.41 | SH 3 OF 8

DOT/AAR NO. 098 481T

377X0755-3

PLAN MUST NOT BE MODIFIED WITHOUT APPROVAL OF SIGNAL ENGINEER.



(SHOWN WITH MECHANISM IN VERTICAL POS.)

CONTACT	CLOSED	FUNCTION
1	0°–89°	MOTOR UP
2		VACANT SLOT
3	46°–93°	MOTOR DN
4	5°–93°	BELL
5	NOTE 5	GATE DN IND
6	83°–90°	FLASH'G LIGHT

NOTES:

1. JUMPERS MUST BE ADDED TO EACH GATE AS SHOWN.
2. GROUND WIRE OF CABLE SHALL BE GROUNDED AT EACH GATE.
3. ALL LIGHT WIRES THIS PAGE ARE TO BE #10 AWG.
4. EOR RELAY WIRING SHOWN IS FOR A SAFETRAN S-PAK FLASHER PACK; IF A GRS X-PAK IS USED, CONSULT THE INSET FOR PROPER WIRING.
5. FACTORY ADJUSTED TO 0°–5°. CHANGE TO 90°–5° TO PROVIDE NORMALLY ENERGIZED INPUT TO RECORDER.

LEGEND

9 TWISTED WIRE TWO TURNS PER FOOT

SIGNAL 1 AND 2 PLAN

PRELIMINARY

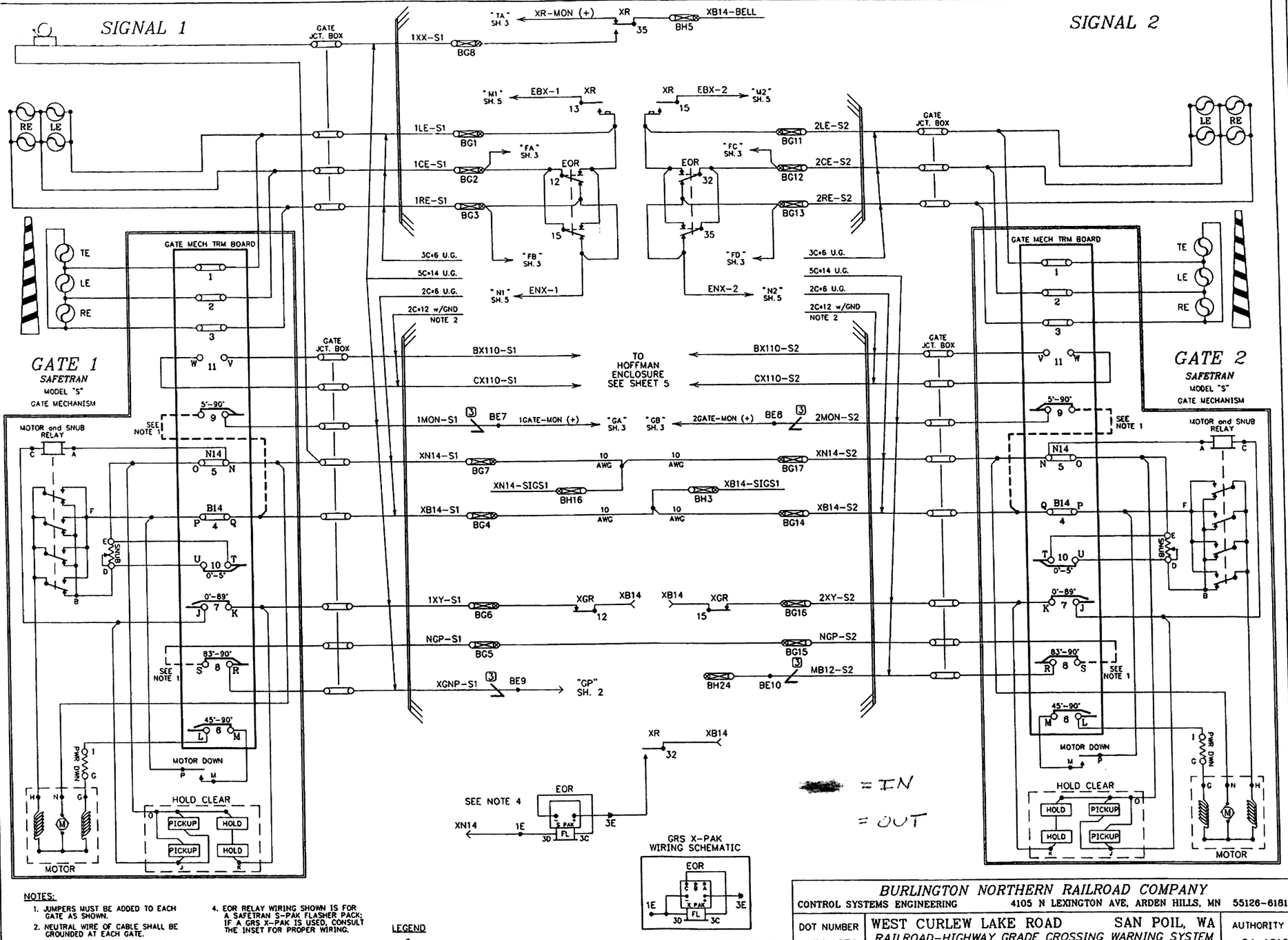
CENTRAL WASHINGTON RAILROAD

CROSSING CIRCUIT PLAN
BEAUDRY ROAD MOXEE, WA

DESIGNED XXXX SEO. | LS | MP 7.41 | SH 4 OF 8

DOT/AAR NO. 098 481T

PLAN MUST NOT BE MODIFIED WITHOUT APPROVAL FROM THE OFFICE OF THE DIRECTOR CONTROL SYSTEMS ENGINEERING



NOTES:

1. JUMPERS MUST BE ADDED TO EACH GATE AS SHOWN.
2. NEUTRAL WIRE OF CABLE SHALL BE GROUNDED AT EACH GATE.
3. ALL LIGHT WIRES THIS PAGE ARE TO BE #10 AWG.
4. EOR RELAY WIRING SHOWN IS FOR A SAFETRAN S-PAK FLASHER PACK; IF A GRS X-PAK IS USED, CONSULT THE INSET FOR PROPER WIRING.

LEGEND

⑨ TWISTED WIRE TWO TURNS PER FOOT

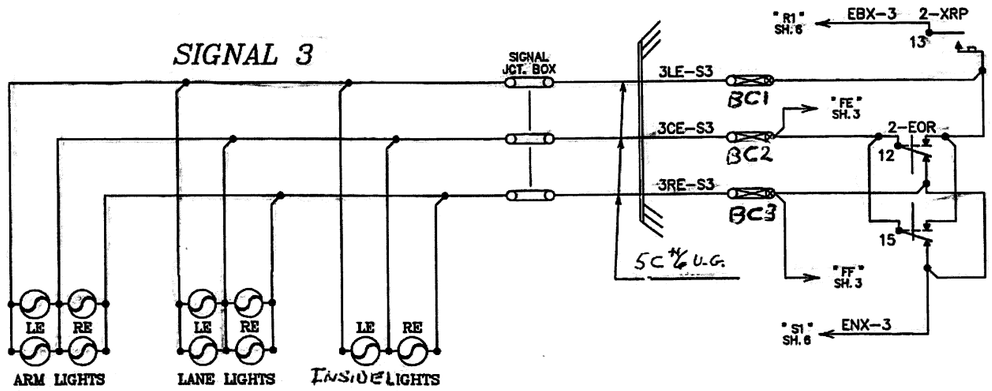
REVISIONS

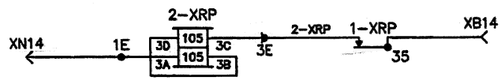
BURLINGTON NORTHERN RAILROAD COMPANY
CONTROL SYSTEMS ENGINEERING 4105 N LEXINGTON AVE, ARDEN HILLS, MN 55126-6181

DOT NUMBER BN 58-878U	WEST CURLEW LAKE ROAD SAN POIL, WA RAILROAD-HIGHWAY GRADE CROSSING WARNING SYSTEM NAPA ST TO SAN POIL M.P. 75.50	AUTHORITY AFE 94-1816

DRAWN: WPC DATE: 10-31-94	LS NO. 377	DWG NO. 377X0755	4	SHEET 7 OF

377X0755-4





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NOTES:

1. ALL LIGHT WIRES THIS PAGE ARE TO BE #10 AWG.

SIGNAL 3 PLAN

PRELIMINARY

CENTRAL WASHINGTON RAILROAD

CROSSING CIRCUIT PLAN
BEAUDRY ROAD MOXEE, WA

DESIGNED XXXX SEQ.#

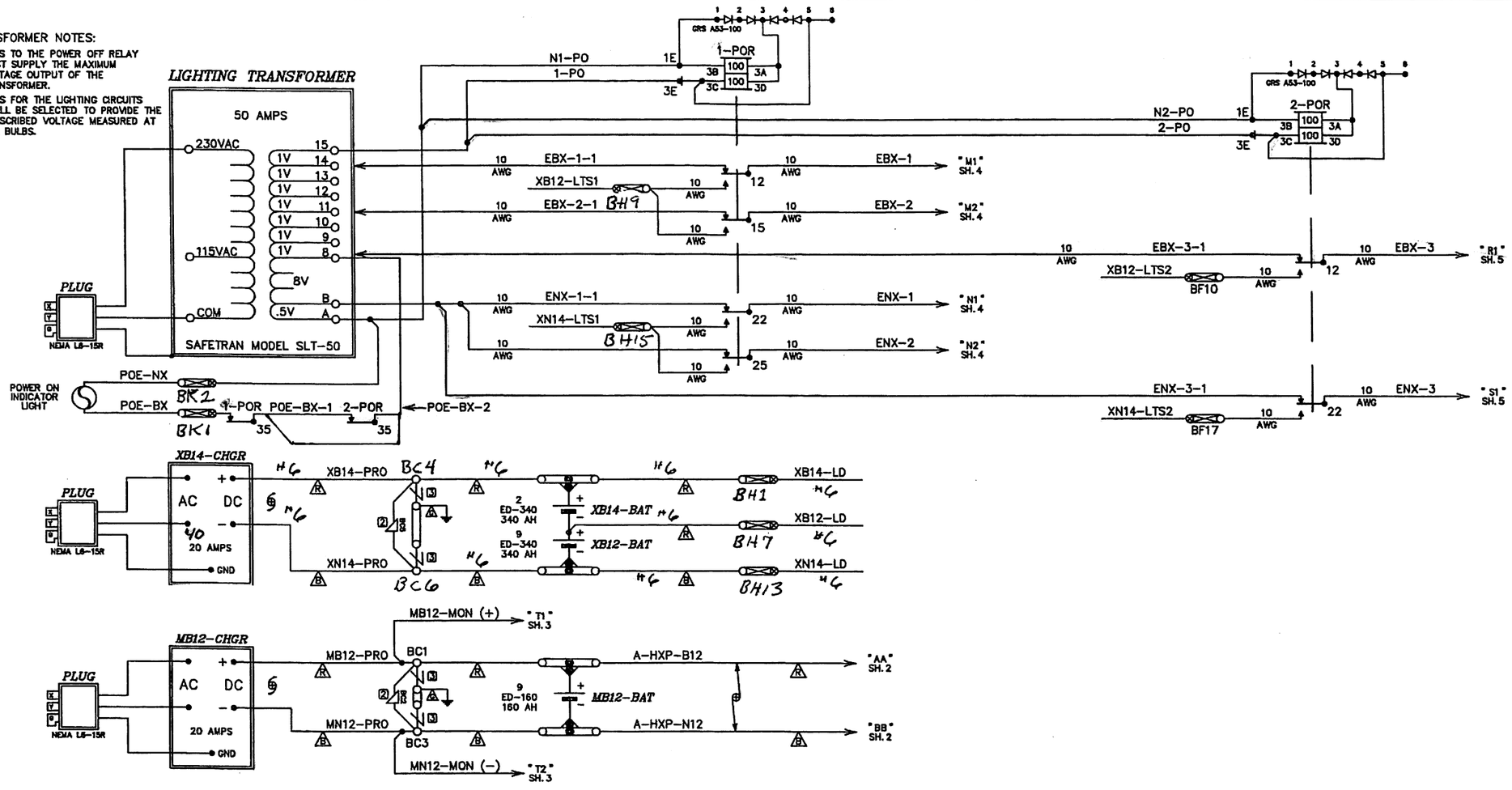
LS | MP 7.41 | SH 5 OF 8

DOT/AAR NO. 098481T

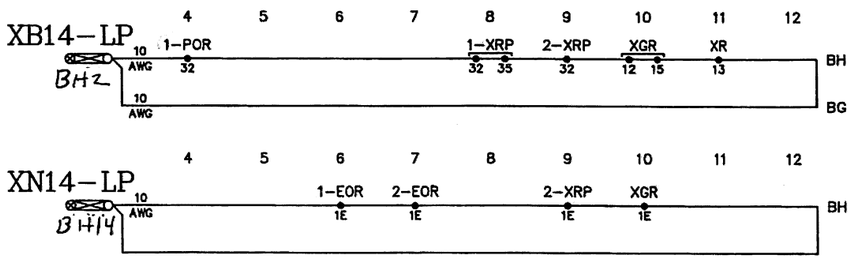
TRANSFORMER NOTES:

TAPS TO THE POWER OFF RELAY MUST SUPPLY THE MAXIMUM VOLTAGE OUTPUT OF THE TRANSFORMER.

TAPS FOR THE LIGHTING CIRCUITS SHALL BE SELECTED TO PROVIDE THE PRESCRIBED VOLTAGE MEASURED AT THE BULBS.



ENERGY LOOPS



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PRELIMINARY

POWER DISTRIBUTION PLAN

CENTRAL WASHINGTON RAILROAD

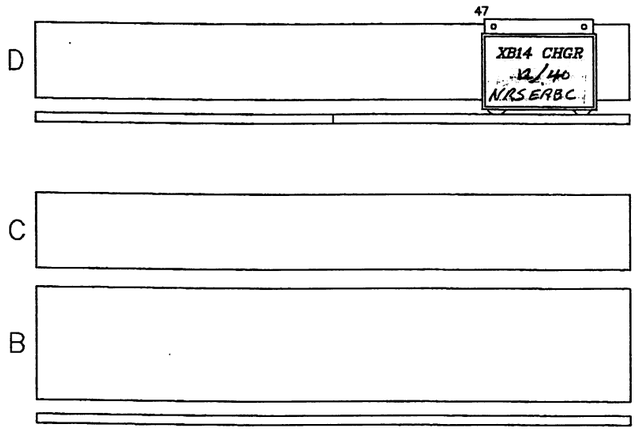
CROSSING CIRCUIT PLAN
BEAUDRY ROAD MOXEE, WA

DESIGNED XXXX SEQ.# | LS | MP 7.41 | SH 6 OF 8

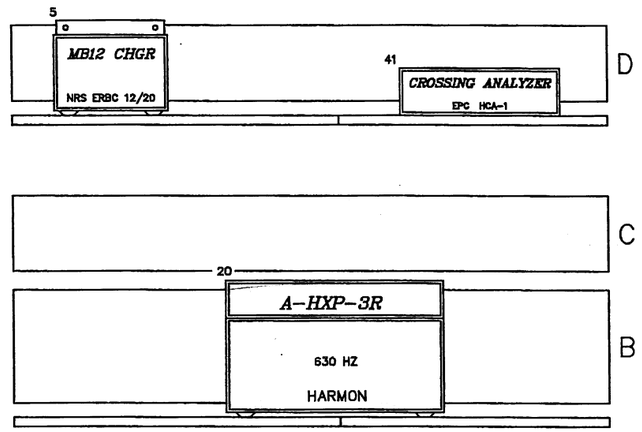
DOT/AAR NO. 098481T

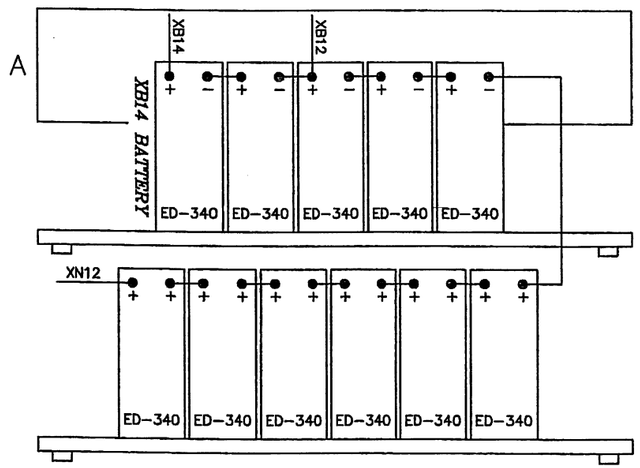
PLAN MUST NOT BE MODIFIED WITHOUT APPROVAL OF SIGNAL ENGINEER

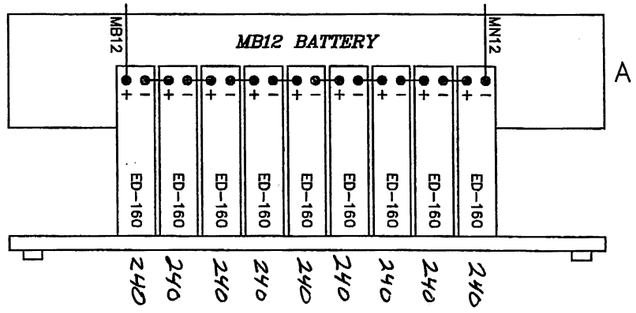
SHELVES SIDE "A"

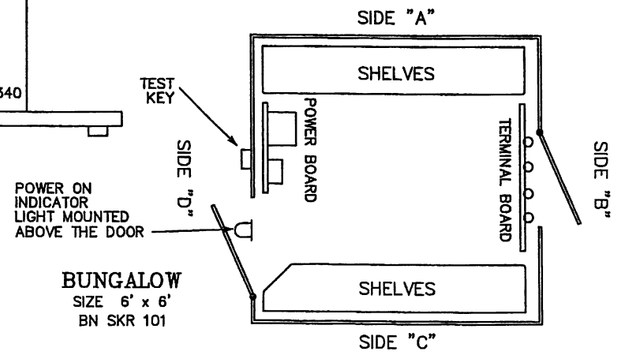


SHELVES SIDE "C"









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SIDES "A" & "C" LAYOUT PLAN

PRELIMINARY

CENTRAL WASHINGTON RAILROAD

CROSSING CIRCUIT PLAN
BEAUDRY ROAD MOXEE, WA

DESIGNED XXXX SEQ.# | LS | MP 7.41 | SH 7 OF 8

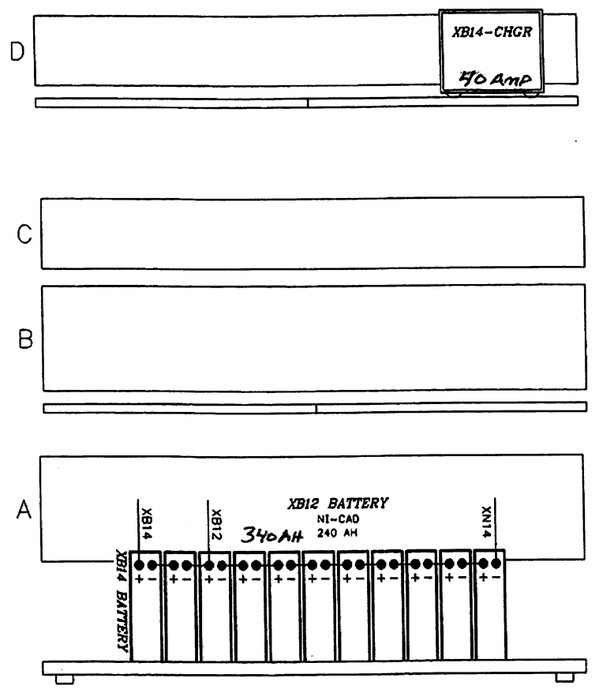
DOT/AAR NO. 098 481T

4400228947X

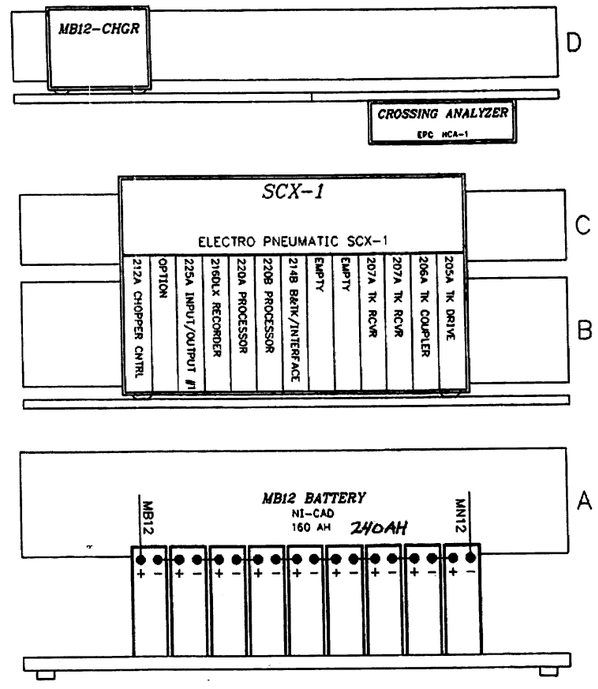
DWG_INFO

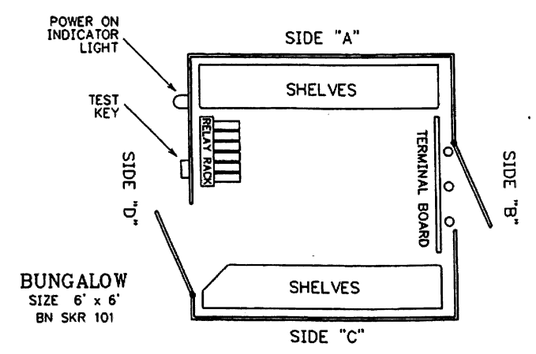
PLAN MUST NOT BE MODIFIED WITHOUT APPROVAL FROM THE OFFICE OF THE DIRECTOR CONTROL SYSTEMS ENGINEERING

SHELVES SIDE "A"



SHELVES SIDE "C"





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Note Move the best 9 cells of ED-240 to MB12 From XB12 AND INSTALL NEW 11 cells of XB14

REVISIONS

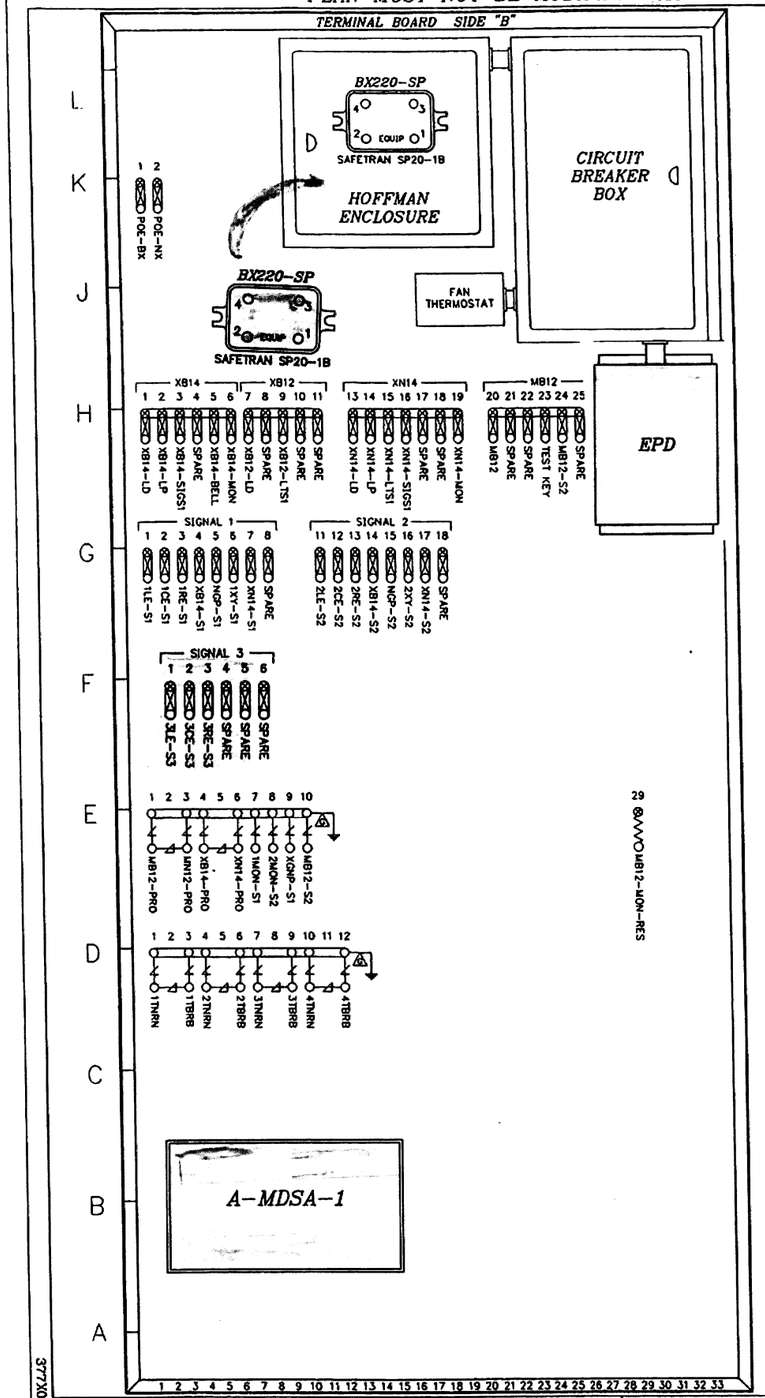
BURLINGTON NORTHERN RAILROAD COMPANY
CONTROL SYSTEMS ENGINEERING 4105 N LEXINGTON AVE. ARDEN HILLS, MN 55126-6161

DOT NUMBER		AUTHORITY
BN 58-878U	WEST CURLEW LAKE ROAD SAN POIL, WA RAILROAD-HIGHWAY GRADE CROSSING WARNING SYSTEM NAPA ST TO SAN POIL M.P. 75.50	AFE 94-1816

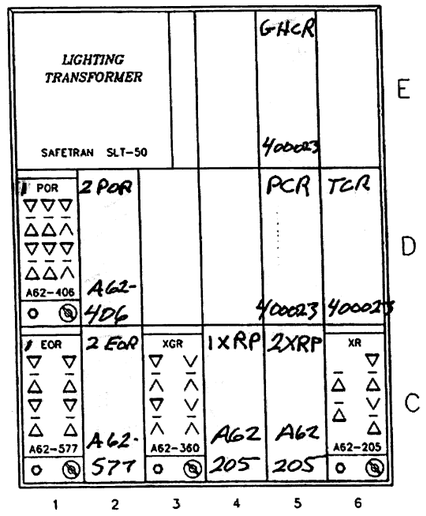
DRAWN: WPC DATE: 10-31-94	LS NO. 377	DWG NO. 377X0755	SHEET 6 OF 7

377X0755-6

PLAN MUST NOT BE MODIFIED WITHOUT APPROVAL FROM THE OFFICE OF THE DIRECTOR CONTROL SYSTEMS ENGINEERING



RELAY RACK SIDE "D"



RELAY CROSS REFERENCE

GRS	SAFETRAN
A62-120	400510
A62-197	400700-7X
A62-205	400021
A62-276	400011
A62-277	400004
A62-360	400200
A62-406	400800
A62-671	400700

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REVISIONS

BURLINGTON NORTHERN RAILROAD COMPANY
CONTROL SYSTEMS ENGINEERING 4105 N LEXINGTON AVE, ARDEN HILLS, MN 55126-6181

DOT NUMBER BN 58-878U

WEST CURLEW-LAKE ROAD SAN POIL, WA
RAILROAD-HIGHWAY GRADE CROSSING WARNING SYSTEM
NAPA ST TO SAN POIL M.P. 75.50

AUTHORITY AFE 94-1816

DRAWN: WPC
DATE: 10-31-94

LS NO. 377

DWG NO. 377X0755

SHEET 8 OF 8

377X0755-7